3. On the Long-lost *Putorius africanus*, Desm., and its Occurrence in Malta. By Oldfield Thomas.

[Received January 15, 1895.]

In 1875 Mr. C. A. Wright, to whom ornithologists are indebted for several additions to the fauna of Europe, due to his study of the birds of Malta, read a paper before this Society[1] on the large Weasel or "Ballottra" of that island. This animal he compared with various species which had been described from the Mediterranean area, but owing to want of material he was unable definitely to determine it. His specimen he was good enough to present to the National Museum, where it has remained unique until recently, when the same gentleman contributed to the Collection a young male and an immature female, and the examination of these fresh examples has given rise to the present remarks.

As stated by Mr. Wright in his paper, the adult male is as large as a large Stoat, with an equally long tail, while it has the uniform coloration of the latter organ characteristic of the Weasel.

On looking up the British Museum material bearing on the subject, happily considerably increased since the time of Mr. Wright's paper, I find a couple of skins, male and female, from Egypt[2], presented and collected by Dr. John Anderson in 1892; and the same energetic collector has also placed at my disposal a fine alcoholic male obtained at Cairo during his last season's explorations.

These Egyptian Weasels, so far as can be judged by external proportions and coloration, appear to me to be clearly conspecific with the Maltese form, and the question therefore arises as to what name should be applied to them.

In the invaluable work[3] on the Mammals of Barbary published in 1885 by M. Fernand Lataste, we find an important discussion on the Weasels of N. Africa, continued and revised by him in his 'Mammals of Tunis' (1887), and supplemented in both places by some notes by Dr. Trouessart, so that we have here the last opinions pronounced on the subject by the two ablest and most modern French students of the Mediterranean fauna.

Briefly epitomized, their opinions are:—(1) that there is only a single form of Weasel in North Africa, closely allied to *P. vulgaris* and *P. boccamela*; (2) that if distinct from both of these, which is doubtful, it should bear the name of *P. subpalmatus*, Hempr. & Ehr. (syn. *P. numidicus*, Puch.); and (3) that *Putorius africanus*, Desm., must have been based on a specimen not really from Africa at all, and perhaps belonging to a Japanese species.

Not a word could be said against these conclusions as based on

[1] P. Z. S. 1875, p. 312.
[2] From the Pyramids of Ghizeh, and Abu-Roash, W. of Cairo.
[3] Act. Linn. Soc. Bord. xxxix. p. 129 *et seqq.* (1885).

the then available material, especially as at that date, in regard to mammalogy in general, we had far less knowledge of our ignorance than I trust we have since gained. It therefore often seemed legitimate to draw conclusions of a character we should not dare to draw now. But, viewed in the light of recent accessions, they clearly need modification, and, so far as I can venture to state at present, it seems evident:—

1. That there are two distinct forms of Weasel in N. Africa, bearing to each other the same relation in size, and, if they overlap in distribution, no doubt in the struggle for existence, as the European Stoat and Weasel do.

2. That the larger of the two is the true *P. africanus*, Desm., practically lost to science since its description in 1818 [1], and that the smaller only is the species referred to by Lataste and Trouessart, and, probably, by other authors who have considered "*P. africanus*" near to or identical with *P. boccamela*.

Of the smaller species the British Museum possesses as yet no authentic Egyptian examples, nor has Dr. Anderson met with it; but from some measurements of the specimens marked "*P. subpalmatus*" in the Berlin Museum, kindly supplied me by Dr. Matschie, it seems probable, as appears below, that the smaller Weasel also occurs in Egypt, in company with the giant species so excellently described by Desmarest three quarters of a century ago and practically lost ever since.

It is to this latter that I would refer Mr. Wright's Maltese Weasel, and would congratulate him on his rediscovery of so interesting an animal.

So far as the respective ranges of the two species are concerned, *P. africanus* has apparently not yet been met with in the western half of N. Africa, in Tunis, Algeria, or Morocco, the region studied by Lataste, although it may of course any day turn up there. If it is really absent, so that its only African locality is Egypt, its occurrence in Malta is of still further interest, as will be readily perceived on looking at the relative positions of the localities concerned.

On the other hand, the eastern distribution of the smaller species remains somewhat doubtful, for from Dr. Matschie's measurements of the four original specimens contained in Hemprich and Ehrenberg's collection it seems probable that the smaller, as well as the larger, Weasel occurs in Egypt.

These measurements, which are given (see p. 130), are those, as Dr. Matschie tells me, of two adult females and two young specimens, all hitherto looked upon as co-types of *P. subpalmatus*.

Now as the description of that animal consists simply of the statement that it is "*statura minor*" as compared with *P. vulgaris*, it is evident that the two larger specimens (A. 373 and 1004) cannot have been included in this description, so that the two smaller ones (Nos. 1003 and 1005) should alone be looked upon as the co-types of

[1] N. Dict. d'H. N. (2) xix. p. 376.

Hemprich and Ehrenberg's name. These two specimens are of just about the size of the smaller N. African Weasel as given by Lataste, and I would suggest that they have been wrongly looked upon as young and that they are really adults of the smaller species, while the two larger specimens might be small females of *P. africanus*.

This point, on which the nomenclature of the smaller species if different from *P. boccamela*[1] will depend, can only be settled by a detailed examination of the Berlin types and their skulls, an examination which I trust Dr. Matschie may himself be able to undertake and give an account of.

That certain Egyptian Weasels are only of the size of *P. boccamela* is also borne out by the characters and measurements given by Hensel[2] of an original skull of *P. subpalmatus* belonging to a skeleton preserved in the Anatomical part of the Berlin Museum[3]. This skull is, however, unfortunately not sexed, and therefore the comparison of measurements may be between female *subpalmatus* and female *boccamela*. Still, Hensel does say distinctly that *P. subpalmatus* is a species "die allerdings mit der *Boccamela* identisch ist," although whether his assertion was based on an examination of external as well as cranial characters I have no means of knowing.

The following are some pertinent measurements of Mediterranean Weasels :—

		Head & body.	Tail.	Hind-foot.
		mm.	mm.	mm.
"*Putorius boccamela*."				
Sardinia (topotype).	♂ (in spirit) ..	206	79	36·6
do. do.	♀ do. ..	145	51	26
Algeria (*fide* Lataste).	♀ do. ..	162	46	26 (with claws).
"*Putorius subpalmatus*" (*fide* Matschie).				
Egypt. No. 1003[4]	(stuffed)....	170	44	26
do. 1005[4]	do.	170	42	26
do. 1004	♀ do.	270	90	33
do. A. 373	♀ do.	270	87	31
Putorius africanus.				
Egypt.	♂ (in spirit)	260	108	47
do.	♂ (skin)	..	..	41
do.	♀ (skin)	..	..	38
Malta.	♂ (stuffed)	(c.)300	105	43

In using the names *boccamela* and *subpalmatus* for present purposes, I do not wish to be taken as expressing any opinion as to

[1] Lataste states that *boccamela* as a technical name dates only from 1835; but Bechstein's 'Naturgeschichte Deutschlands,' in which it occurs (vol. i. p. 819), was published in 1801, and I also notice that the species was binomially quoted by Fischer (Syn. Mamm. p. 224) in 1829, so that in any case it is of earlier date than *subpalmatus*.

[2] "Craniologische Studien," N. Act. Leop. xlii. pp. 177–179, Table S, column 4 (1881).

[3] No. 5661.

[4] The real co-types; see above.

the specific validity of the forms respectively so called, as the positions of both need much further investigation.

Nor should I even like to say positively that *P. africanus* is specifically distinct from the large South-Italian Weasels, of which many more specimens will be needed before we can say whether or no they grade into the Maltese representative of the group. Indeed the only points that I can claim to have made out with any certainty are (1) that *P. africanus* is a genuine African animal, found in Egypt, and (2) that a practically identical form occurs in Malta.

4. On the Visceral Anatomy and Brain of *Dendrolagus bennetti*. By Frank E. Beddard, M.A., F.R.S., Prosector to the Society.

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So far as I am aware the only published account of the visceral anatomy of this genus is a paper by the late Sir Richard Owen [1], which, moreover, deals with a different species. It seemed to me therefore to be worth while to put on record such additional facts as I have been able to observe concerning the structure of this aberrant genus.

Before proceeding to describe the anatomy of the viscera, there are two external characters to which I should like to call attention.

The first of these relates to the colour of the fur: the shorter and deeper-lying hairs in many parts of the body are of a pink colour, like that which colours the throat of *Macropus rubens*. This pink hue does not appear until the fur is ruffled and the deeper hair brought into view.

As to the second point, I must first refer to a paper by the late Prof. Garrod [2] upon *Dorcopsis luctuosa*. In that paper he described "four large and conspicuous glandular hair-follicles in the middle line, arranged to form a square," lying in the skin between the jaws. These are figured [3]. I observed nothing in *Dendrolagus* of so obvious an appearance as the structures figured by Garrod; but, when the skin was removed, two small black hair-follicles were easily visible lying side by side. From the apex of each of these proceeds a hair, which is not any longer than the other hairs upon the throat. I examined a specimen of *Petrogale penicillata*, and found that it exactly resembled *Dendrolagus bennetti* in this respect. Whether these structures represent in a rudimentary form the large and complicated sternal glands of *Myrmecobius* [4] and *Didelphys dimidiata* [5] I am unable to say.

[1] "Notes on the Anatomy of the Tree-Kangaroo (*Dendrolagus inustus*, Gould)," P. Z. S. 1852, p. 103.

[2] "On the Kangaroo called *Halmaturus luctuosus* by d'Albertis, and its Affinities," P. Z. S. 1875, p. 48.

[3] *Loc. cit.* pl. viii.

[4] "Note on a Point in the Structure of *Myrmecobius*," P. Z. S. 1887, p. 527.

[5] "Note on the Sternal Gland of *Didelphys dimidiata*," P. Z. S. 1888, p. 353